

In the Claims

Kindly cancel claims 22-26 without prejudice. Kindly add new claims 36-39 as follows:

Claims 1-21 (Canceled)

22. (Canceled) A heat pipe comprising:

an elongated enclosed volume defined by a wall having a first end and a second end, at least a portion of said wall comprising solid diamond, said wall located proximate to at least one of said first end and said second end; and

a cooling fluid disposed in said elongated enclosed volume and having a liquid phase and a vapor phase within said elongated enclosed volume.

23. (Canceled) The heat pipe of claim 22 further comprising a capillary mass disposed in said elongated enclosed volume between said first end and said second end.

24. (Canceled) The heat pipe of claim 22 wherein said at least a portion of said wall comprising diamond is configured to transfer thermal energy to said cooling fluid.

25. (Canceled) The heat pipe of claim 22 wherein said at least a portion of said wall comprising diamond is configured to transfer thermal energy from said cooling fluid.

26. (Canceled) The heat pipe of claim 22 wherein said wall is a solid slab of diamond configured to be mountable to said elongated enclosed volume.

27. (Previously Added) A heat pipe comprising:

~~designed~~ a rigid plenum having a vaporization region coupled to a condensation region through a center section;

a diamond wall defined in at least one of said vaporization region and said condensation region;

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a capillary mass configured for fluid flow disposed in said rigid plenum between said vaporization region and said condensation region; and

a cooling fluid disposed in said rigid plenum, said cooling fluid having a liquid phase and a vapor phase within said rigid plenum.

28. (Previously Added) The heat pipe of claim 27 wherein said diamond wall is configured to transfer thermal energy to said cooling fluid in said vaporization region.

29. (Previously Added) The heat pipe of claim 27 wherein said diamond wall is configured to transfer thermal energy from said cooling fluid in said condensation region.

30. (Previously Added) The heat pipe of claim 27 wherein said diamond wall is configured to be mountable to said rigid plenum.

31. (Previously Added) The heat pipe of claim 27 wherein said diamond wall is configured to provide lateral heat spreading of hot spots.

32. (Previously Added) The heat pipe of claim 27 wherein said rigid plenum is entirely comprised of diamond.

33. (Previously Added) The heat pipe of claim 27 wherein said diamond wall is a solid slab of diamond.

34. (Previously Added) The heat pipe of claim 27 wherein said diamond wall is a portion of said rigid plenum.

35. (Previously Added) The heat pipe of claim 27 wherein said diamond wall is metallized and is attached to said rigid plenum with solder.

36. (NEW) The heat pipe of claim 27 wherein said rigid plenum defines an interior and an exterior, said diamond wall configured to contact with said interior and said exterior.

37. (NEW) The heat pipe of claim 27 wherein said diamond wall defines an interior portion and an exterior portion opposite said interior portion, said interior portion configured to contact with said cooling fluid.

38. (NEW) The heat pipe of claim 27 wherein said diamond wall defines an interior portion and an exterior portion opposite said interior portion, said exterior portion configured to contact at least one of a heat source and a cooled heat sink.

39. (NEW) The heat pipe of claim 27 wherein said diamond wall defines an interior portion and an exterior portion opposite said interior portion, said interior portion configured to contact with said cooling fluid and said exterior portion configured to contact at least one of a heat source and a heat sink.